Wisconsin
Department of Commerce

ENVIRONMENTAL & REGULATORY SERVICES DIVISION
201 West Washington Avenue
P.O. Box 7837
Madison, Wisconsin 53707-7837

Program Letter
Bureau of Storage Tank Regulation
April 1998

ABOVEGROUND STORAGE TANK ANTI-SYPHON VALVES

Section ILHR 10.415 (10)(c) requires an electrically operated solenoid valve to be provided at the point of discharge of aboveground vehicle fuel tanks. The solenoid valve must be normally closed and serves to prevent the syphoning of product from occurring if there is a break in the line from the tank to the dispenser. The department has been approached by industry to allow the use of a mechanical anti-syphon valve as an alternative to the electrically operated solenoid valve required by ILHR 10. .An Official Code Interpretation was issued in March of 1992 that allowed a vacuum breaker to be installed on tank top mounted pump/dispenser units in place of the electrically operated solenoid valve. The vacuum breaker must meet certain criteria. The vacuum breaker is to be approved by the pump manufacturer and set to open based on the head pressure exerted by the dispenser hose. The tank top pump-dispenser unit is required to be non-retail service and have no piping attached, other than that required to attach the discharge hose. Since the 1992 interpretation the department has allowed vacuum breakers to be installed on the tank top retail pump/dispenser units.

The department will allow the use of a mechanical anti-syphon valve in lieu of the electric solenoid valve required by ILHR 10. A mechanical anti-syphon valve must meet the following criteria to be installed on an above ground vehicle fueling system.

- The valve/components must be shown to be compatible with the product being dispensed.
- The valve proposed for installation shall be designed to prevent syphoning of product based on the hydrostatic head pressure of the system. The head pressure shall be calculated using the volume/weight of product in the pipe as measured from the tank top to the lowest point of the product dispensing pipe.
- Mechanical anti-syphon valves shipped preset from the manufacturer shall have:
  - written guidelines for determining what model valve must be installed on a specific system.
  - permanent method of identifying the valve model installed.
  - means to prohibit the adjustment of factory preset.
  - means to identify tampering with factory preset.
- Mechanical anti-syphon valves that require field adjustment shall have a:
  - written protocol for the calculation of system head pressure.
  - written protocol for the valve adjustment.
  - written field test procedure to insure that the valve is properly adjusted to the head pressure of the system.
  - means to prohibit adjustment by other than qualified persons after valve is set and tested.
  - means to identify any alteration of the valve setting by persons not qualified to verify proper valve operation.

- Application for installation of fueling systems incorporating a mechanical anti-syphon valve shall include:
  - Location of valve on tank.
  - Product pipe size(ID)
  - Distance between tank top and lowest point in product pipe. (Provide scaled drawing)
  - Pipe volume and head pressure calculations.
  - Manufacturer, model and range of use for the valve if factory preset.
  - Manufacturer sizing charts if used to determine valve size or model.
  - Method used to relieve thermal expansion.

Note: At time of installation the installer shall provide inspector with documentation that valve is properly adjusted and tested prior to placing the system into operation.

Should the mechanical anti-syphon valve fail to operate in a manner consistent with the requirements of ILHR 10.415 it shall be removed and replaced with a properly functioning and tested mechanical anti-syphon valve or electric solenoid valve.